The JOURNAL

FALL 1959

OF THE

NATIONAL ATHLETIC TRAINERS ASSOCIATION

11th ANNUAL MEETING

KANSAS CITY, MISSOURI, JUNE 27, 28, 29, 1960

THE SECRETARY'S REPORT

Tenth Annual Meeting of National Athletic Trainers Association June 16, 1959

The tenth annual meeting of the National Athletic Trainers Association was held in the Hall of Mirrors of the Deschler-Hilton Hotel, Columbus, Ohio. The meeting was called to order at 4:17 P.M. by Chairman of the Board Whitey Gwynne.

The roll call was dispensed with.

The minutes of the 1958 meeting at Miami Beach, Florida, were approved without being read. The report of the Board of Directors meeting of June 18, 1958, was read and approved.

BOARD OF DIRECTORS MEETING, JUNE 18, 1958

These items were taken under consideration:

1. Representation to the United States Olympic Association was discussed.
   a. No official action taken at this time.
2. It was asked that monies be set aside for committee work.
   a. No official action taken at this time.
3. The Board expressed appreciation to Dave Wike, Exhibits Manager, and Sam Lankford, Program Chairman, for a job extremely well done.
4. Chuck Medlar reported for the Constitution and By-Laws Committee.
   a. The Board gave permission to send the revised constitution and by-laws for a mail vote of the active membership.
5. The title of the National Secretary was changed to Executive Secretary.
6. The Committee on Gaining Recognition was changed to that of Committee for Professional Advancement.
7. A report was given by the Chairman of the Committee for Professional Advancement.
   a. The Board gave permission to send the curriculum report to the active membership for a mail vote.

Duke Wyre was selected to represent N.A.T.A. on the United States Olympic Association by mail vote of the Board of Directors. He is also to represent the Association at the meetings of the Sub-Committee on Training of the U. S. Olympic Committee.

The treasurer's report was read along with a certified statement from the Purdue National Bank of Lafayette. It was moved, seconded and approved that the report be accepted.

N.A.T.A. TREASURER'S REPORT

June 12, 1959		
Balance on hand June 1958		$2,010.25
Deposits:		
Dues	$1,958.00	
Sale of Pins and Emblems	39.00	
Balance of Picnic Fund	233.18	
'58 Registration Fees	227.00	
Journal Advertisements	867.25	
Journal Subscriptions	12.00	3,336.43
Disbursements:		
Lafayette Mailing Service	261.69	
Secretarial Work	772.00	
Postage and Telegrams	144.43	
Stationery, Envelopes, etc.	100.43	
U. S. Olympic Dues	10.00	
N.C.A.A. Dues	25.00	
Refund on Advertisement	11.87	
Expense of U. S. Olympic Meetings in New York	91.00	
Revolving Fund (Journal Expense for Tom Healion)	50.00	
Les Needham Fund	25.00	
Office Supplies	27.14	
Dues Return	86.00	
Program Recorder	25.00	
New Pins	231.63	
Two issues of 1957 Journal	891.22	
Three issues of 1958 Journal	1,063.75	3,816.16
Balance on hand June 1959		1,530.52
Checks not canceled		29.60
		7.14
Certified Statement from Bank		1,567.26

N.A.T.A. MEMBERSHIP – JUNE 1959

Active	366
Associate	217
Allied	31
Advisory	62
Honorary	5
Retired	3
Total	684

The secretary read the report of the Chairman of the Board of Directors.

REPORT OF THE CHAIRMAN OF THE BOARD OF DIRECTORS

At the Board of Directors meeting these actions were decided upon:

1. The minutes of the Board's meeting, June 18, 1958, were read and approved.
2. The Treasurer's report was presented and approved.
3. Duke Wyre reported to the group on the activities of the Sub-Committee on Training of the United States Olympic Committee. The report was approved.
4. It was moved that the Board make clear that Duke Wyre, until changed by action of the Board, be the official representative of N.A.T.A. to the United States Olympic Association and further to represent N.A.T.A. on the Sub-Committee on Training of the U. S. Olympic Committee.
5. It was moved and approved that Duke Wyre be authorized to recommend to the Olympic Committee that all future dates of Pan-American and Olympic games not be later than the last day of August.
6. Jim Hunt, Chairman of the Committee on Committees, reported by letter on the Committee's activities and recommended that all standing committees be assigned as a three, six or nine man committee and that all standing committee personnel be elected on a three-year rotating basis. The report was approved.
7. Kansas City, Missouri, will be the site of the 1960 annual meetings with District No. 5 acting as host.
8. Jackie Copeland of Odessa High School, Odessa, Texas, was elected Editor of the Journal. Tom Healion was re-elected Advertising Manager. Commercial Printing Company, Lafayette, Indiana, will again publish the Journal.
9. The Board approved and adopted an athletic training program as presented by the chairman of the Professional Advancement Committee.

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THE SECRETARY'S REPORT (Continued)

10. N.A.T.A. will have an exhibit at the Congress on Sports Medicine at the Pan-American Games, September 2, 1959.
11. Bill Newell was re-elected as Executive Secretary.
12. The possible purchase of a Dictaphone to be used by the National Office was discussed.
13. The Les Needham family asked that their thanks be extended to the national membership.
14. Membership in N.A.T.A. has been denied any member of the chiropractic profession for the year 1960 and thereafter.

The report was moved for approval, seconded and carried.

COMMITTEE REPORTS:

Code of Ethics

A letter from Howard Waite, Chairman, was read expressing regret for being unable to attend the meeting. He also stated "there were no reported violations by any of our members which proves our organization is morally and ethically sound. We all hope this status continues. In consulting with our advisory members, I have been advised by them to alert our members to be always vigilant and cautious in the use of certain drugs and medications. That advice is always good and means that we trainers should cooperate wholeheartedly with our team physicians."

Constitution and By-Laws

Returned to Committee for final draft.

Honorary Memberships and Awards

Walter Bakke presented Don H. O'Donoghue, M.D., as a recipient of Honorary Membership and an honor award for outstanding service to the Athletic Training Profession. This action was received with a standing ovation.

Professional Advancement

The Chairman announced that the curriculum had been accepted by a vote of the active membership. There were seven disapproval votes—three hundred and forty approving. It was also announced that N.A.T.A. had been given recognition by the American College Health Association in the past year.

A standing ovation was given to Ernie Biggs, Program Chairman, and to Jackie Copeland, Exhibits Manager, for a job very well done.

It was called to the attention of the members that

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THE JOURNAL of the NATIONAL ATHLETIC TRAINERS ASSOCIATION

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WILLIAM "PINKY" NEWELL, Executive Secretary
Purdue University, Lafayette, Indiana

N.A.T.A. DIRECTORS

DISTRICT 1:
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont.
JOSEPH ALTOTT — Williams College, Williamstown, Massachusetts

DISTRICT 2:
Delaware, New Jersey, New York, Pennsylvania.
JULES REICHEL — Syracuse University, Syracuse, New York

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EDWARD N. MOTELEY — Virginia Polytechnic, Blacksburg, Virginia

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GEORGE ANDERSON — University of California, Berkeley, California

DISTRICT 9:
Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, Tennessee.
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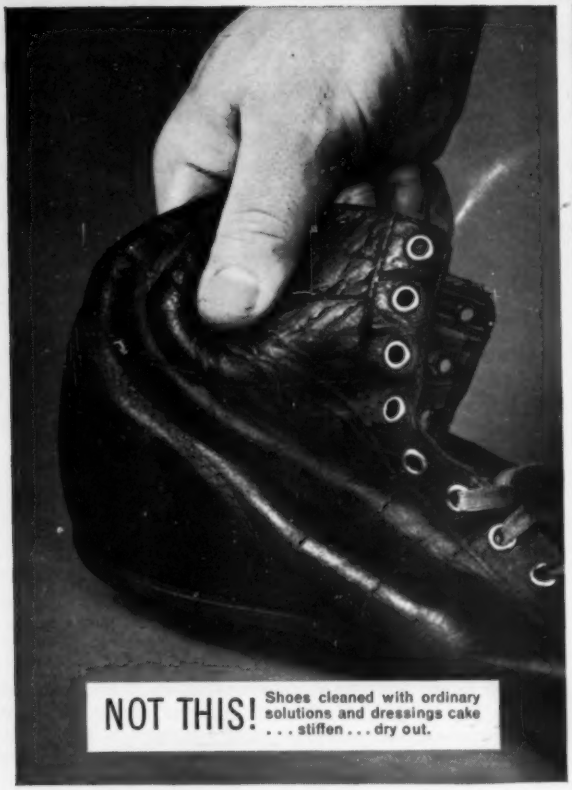

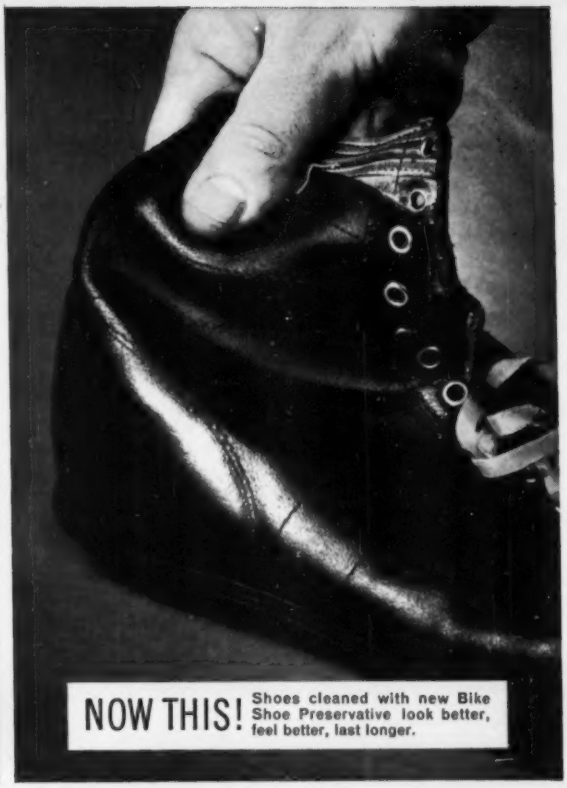

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THE SECRETARY'S REPORT (Continued)

Jim Brisnahan, Long Beach, California, and Les Needham, Wichita University, had passed away during the past year. One minute of silence was observed in honor of the deceased members.

Whitey Gwynne presented the new Board of Directors:
District 1, Joe Altott, Williams College
District 2, Jules Reichel, Syracuse University
District 3, Ed Motley, Virginia Polytechnic
District 4, Bob Weingart, Marquette University
District 5, A. D. Dickinson, Iowa State Teachers College
District 6, Ross Moore, Texas Western
District 7, Tow Diehm, University of New Mexico
District 8, George Anderson, University of California
District 9, Kenny Howard, Alabama Polytechnic

Bob Weingart, Marquette University, was presented as the new Chairman of the Board of Directors.

A standing ovation was given Jack Heppinstall, retiring Athletic Trainer at Michigan State University.

The meeting was adjourned at 4:45 P.M.

William "Pinky" Newell
Executive Secretary

At the second meeting of the Board of Directors for 1959, these men were appointed to the following committees:

Standing Committees:

Membership—Nine Members

Three year appointment

William F. X. Lindsey, Chairman
163 Magazine Street
Cambridge 39, Massachusetts
(Representing District No. 1)

Robert Grant
Assistant Trainer
Purdue University
West Lafayette, Indiana
(Representing District No. 4)

Marshall Cook
Montana State College
Athletic Department
Bozeman, Montana
(Representing District No. 7)

Two year appointment

Edgar H. Biggs
Bucknell University
Lewisburg, Pennsylvania
(Representing District No. 2)

Dean Nesmith
Athletic Department
Kansas University
Lawrence, Kansas
(Representing District No. 5)

Eddie Lentz
Head Athletic Trainer
Washington State College
Pullman, Washington
(Representing District No. 8)

One year appointment

Wayne Rudy
Athletic Trainer
Southern Methodist University
Dallas, Texas
(Representing District No. 6)

Sam Lankford
Box 2787
University Station
Gainesville, Florida
(Representing District No. 9)

Robert L. Martin, Jr.
Athletic Trainer
Wake Forest College
Winston-Salem, North Carolina
(Representing District No. 3)

Code of Ethics—Six Members

Three year appointment

Howard White, Chairman
Head Athletic Trainer
University of Pittsburgh
Pittsburgh, Pennsylvania

Henry "Buck" Andal
Head Athletic Trainer
Georgia Tech
Atlanta, Georgia

Two year appointment

Edward J. Herman
17 Dunster Street
Cambridge, Massachusetts

George Anderson
Assistant Athletic Trainer
University of California
Berkeley, California

One year appointment

James E. Hunt
Head Athletic Trainer
University of Michigan
Ann Arbor, Michigan

Buddy Perrilo
Head Athletic Trainer
Tulane University
New Orleans, Louisiana

Advisory

Robert G. Brashear, M.D.
Bagwell-Brashear Clinic
207 Medical Arts Building
Knoxville, Tennessee

Injury Committee—Six Members

Three year appointment

Kenneth B. Rawlinson, Chairman
Athletic Trainer
University of Oklahoma
Norman, Oklahoma

John "Rusty" Payne
Athletic Trainer
University of Kentucky
Lexington, Kentucky

Two year appointment

Richard Carr
University of Arizona
Athletic Department
Tucson, Arizona

Bill Dayton
Yale University
Athletic Department
New Haven, Connecticut

One year appointment

A. J. Duke Wyre
Head Athletic Trainer
University of Maryland
College Park, Maryland

Weaver Jordan
Athletic Trainer
Baylor University
Waco, Texas

Constitution and By-Laws—Three Members

Three year appointment

Charles Medlar, Chairman
Head Athletic Trainer
Penn State University
University Park, Pennsylvania

Two year appointment

Jules Reichel
303 University Avenue
Syracuse, New York

One year appointment

Whitey Gwynne
Head Athletic Trainer
West Virginia University
Morgantown, West Virginia

Twenty-five Year Award—Three Members

Three year appointment

Porky Morgan, Chairman
Head Athletic Trainer
Kansas State College
Manhattan, Kansas

Two year appointment

Jim Stults
Athletic Trainer
Colorado A and M
Fort Collins, Colorado

One year appointment

Warren "Pionie" Ariail
Athletic Department
Iowa State College
Ames, Iowa

Honorary Membership and Awards—Three Members

Three year appointment

Walter Bakke, Chairman
Head Athletic Trainer
University of Wisconsin
Madison, Wisconsin

Two year appointment

W. J. "Dutch" Lushbaugh
Head Athletic Trainer
Starkville, Mississippi
Mississippi State College

One year appointment

Ross Moore
Athletic Trainer
Texas Western College
El Paso, Texas

Replacements for all one and two year term men will be appointed to a three year term to put all committees on a properly rotating basis.

AN ATHLETIC TRAINING PROGRAM

(This training program was fully approved at the recent national meeting and it is the sole responsibility of the membership to adapt this program wholeheartedly to make it work.)

The National Athletic Trainers' Association, in an effort to raise standards of athletic training, recently approved a program of athletic training education. To make it an acceptably workable program, the athletic trainers must receive direction, advice, guidance, and supervision from two main areas (medical, N.A.T.A.) and unqualified use of existing facilities in two others (Physical Education, Physical Therapy).

Medical:

The medical doctor should expect qualified assistance from the athletic trainer in the management and prevention of athletic injuries, and assume the responsibility of supervising the total prescription.

The athletic trainer should cooperate completely with the team physician or any other medical advisor assigned to the organization, and carry out the minute details of the doctor's orders.

Physical Education:

The physical education department, by accepting the minimal requirements as suggested by N.A.T.A. in the physical education curriculum, will help relieve an established need for competent athletic training on the high school level. The Department should be able to assure prospective employers that graduates will have adequate background in the prevention and management of athletic injuries, and qualification for a teaching license. The Department should cooperate with the existing placement agency of the University in matters of placement.

In the promotion of a more comprehensive program, the athletic trainer will act as advisor, instructor, and first-aider.

Physical Therapy:

N.A.T.A. should encourage the athletic trainer to continue his education by completing at least a certificate course in physical therapy at an accredited school. The qualified combination of teacher-athletic trainer-physical therapist, could assume the physical therapy duties for schools and communities in times of emergency. This could be a real service to the county medical societies in their medical attention to the smaller communities.

Activities of the profession are reflected in terms of—Areas of Service, Coordination of the Total Prescription, and the Educational Program. The success of a profession is not measured by financial standards, but rather by accomplishments in serving the needs of people.

Members of the athletic training profession should be qualified to give service in the following areas:

Athletics:

The primary concern of the trainer is the management and prevention of athletic injuries. Most athletic injuries are accidents. Under the guidance of the medical profession, the athletic trainer must concern himself with the prevention of these accidents. He can do this daily with the supervision of the safety factors of all athletic fields by seeing that all undue hazards are either removed or eliminated; the care and issuing of equipment; and the supervision of all training menus. Due to the brief time element involved in athletics and the inability to completely rehabilitate injured athletes in season, the athletic trainer must be accomplished in preventive and supportive strappings.

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AN ATHLETIC TRAINING PROGRAM (Cont.)

The athletic trainer, in the management of athletic injuries, must give "on the field first-aid" and follow up and carry out in detail the medical doctor's prescription of after treatment and rehabilitation.

Physical Education:

The athletic trainer should assume the responsibility for the care of injuries in physical education and intramural sports. Since there is a high degree of similarity of injuries in these areas to that of athletics, there appears to be some sound justification for the inclusion of all injuries in physical education, athletics, and intramural sports under the term "athletic injury."

Student Health:

There is evidence that school enrollment will double in the next ten years. With expanding community hospital facilities remaining overly crowded, this would indicate that there must be qualified personnel to aid the medical doctor in caring for the health of the student, faculty, and staff. The qualified athletic trainer-physical therapist would be able to carry out the prescribed physical therapy duties for the schools.

Besides participating as a member of the athletic medical team, trainers have the unique position of being closely associated with the administrators, coaches, and players. Athletic trainers should coordinate, under medical supervision, and with the cooperation of administrators and coaches, the total prescription of training and conditioning for so long as the athlete is a responsibility of the athletic department. This responsibility includes the prevention and care of athletic injuries, and can be viewed in four phases—Prevention, First-Aid, After Treatment, and Rehabilitation of all injuries.

Prevention:

The trainer acts as advisor to coaches and athletes in matters concerning the various health and conditioning problems. His advice may be sought in matters pertaining to physical examinations; diet; warm-up and calisthenics; preseasonal, seasonal, and post seasonal conditioning.

First-Aid:

The athletic trainer's responsibility to the athlete in the first forty-eight hours requires qualification beyond the prescribed procedures as set down for Red Cross first-aid. After careful examination, the qualified trainer should make a decision as to whether or not a player is to be removed from the playing area. If the player has an injury of any severity, the athletic trainer should obtain a detailed history of the injury and make observations of symptoms and signs of inflammation. As soon as possible, the trainer should give an initial impression as to severity so as to aid the team physician in his diagnosis. The athletic trainer should follow up the incidence of injury by the application of splints, cold, pressure, elevation, or rest as indicated. The team physician should then be notified.

After Treatment:

During the convalescent period following the first forty-eight hours, the qualified athletic trainer should carry out in detail the medical orders, including the prescribed use of physical agents.

Rehabilitation:

The athletic trainer should make every effort to prepare the athlete mentally and physically for his successful return to partial or full time sports participation.

In the N.A.T.A. approved program of education, the athletic trainer should be encouraged to act as liaison with the departments of physical education and student health. The program includes a major study in physical education, a minor study in a restricted area, and necessary courses required by the states for a teaching license. Also entered in the degree program, are prerequisites for entry to schools of physical therapy as suggested by the American Physical Therapy Association. The basic minimal requirements as recommended by N.A.T.A. are as follows:

I. Comprehensive (Major) License in Physical Education Variable, by states

II. Restricted (Minor) License in another subject Variable, by states

III. Pre-requisites for entry in school of Physical Therapy
  A. Minimal requirements suggested by A.P.T.A.
    1. Total of 24 semester hours in laboratory physical, biological, and social sciences.
      a. Biology—zoology (anatomy and physiology) —8 hours
      b. Physics and/or chemistry—6 hours
      c. Social sciences (at least 6 hours in psychology—10 hours
    2. Electives strongly advised
      a. Additional biological and social sciences
      b. Physical education, such as group activities, dancing, etc.
      c. Hygiene
      d. Speech

IV. Specific, Required Courses (if not included in I, II, and III, these must be added)
  A. Anatomy
    1. One or more courses which will include human anatomy
  B. Physiology
    1. Circulation, respiration, digestion, excretion, nerve, brain, and sense organs
  C. Physiology of Exercise
  D. Applied Anatomy and Kinesiology
    1. The muscles; emphasis on their functions in and development for specific activities
  E. Laboratory Physical Science
    1. Six semester hours in physics and/or chemistry
      a. Include principles of chemistry
  F. Psychology
    1. Six semester hours
      a. Including personality, intelligence, emotion, memory, thinking, attention, perception, learning
  G. Coaching Techniques (9 semester hours)
    1. Include football, basketball, track
    2. Recommend baseball, soccer, wrestling, plus preferred sports by geographic areas
  H. First Aid and Safety
    1. Minimum of Red Cross First Aid
  I. Nutrition and Foods
    1. Basic principles of nutrition
    2. Basic diet and special diet
  J. Remedial Exercise
    1. Exercise for a typical and/or both temporary and permanent handicaps
  K. Organization and Administration of Health and Physical Education Programs
  L. Personal and Community Hygiene

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AN ATHLETIC TRAINING PROGRAM (Cont.)

M. Techniques of Athletic Training
   1. Basic, general course (acceptable course for all coaches)

N. Advanced Techniques of Athletic Training
   1. Special course for athletic training candidates with full academic background

O. Laboratory Practices (6 semester hours credit or equivalent work)

V. Recommended Courses
   A. General Physics
   B. Pharmacology
      1. Specific side effects of drugs
   C. Histology
      1. Tissues and methods of studying them
   D. Pathology
      1. Laboratory study of tissues in pathological condition

MEDICAL HYPNOSIS AND ATHLETICS

T. T. PECK, JR., M.D.
Baytown, Texas

To the average person hypnosis is symbolic with mysticism and stage entertainment. For this reason, I should like to clarify a few misconceptions about medicine's newest therapeutic tool. There are numerous definitions of hypnosis, but in my opinion, it is in general a form of suggestion. Each of you every day are exposed to many forms of hypnosis and hypnotic suggestion and almost everyone experiences a light hypnotic trance several times a day.

Many of us go into a medium hypnotic trance without even realizing what has happened. Advertising is the most common form of hypnotic suggestion. All of us have seen and heard the fascinating television advertisements with singing and talking and at the same time watching some scene that holds our attention. While we are concentrating on the picture the repetition of the product is being recorded in our sub-conscious minds. Everytime we day dream we are in a light hypnotic trance. Highway hypnosis is another form of self hypnosis that is very common to many people. Pictures of enticing foods that stimulate the desire for food is still another form of hypnotic suggestion. So you see hypnosis is much more common than one realizes.

It is not my purpose to go into detail with you on the dynamics of hynosis at this time. It is, however, my honest opinion that you, as trainers and molders of young people, should be aware of how very much you do, and can do, to influence those you are helping. The athletic trainer is, in many respects, much more important than the physician or coach in regards to athletic injuries. This I sincerely mean, and if one stops long enough to look at the facts it is easily understood. What occurs physiologically and psychologically when a person is injured? One of the most frequent reactions is pain which is often accompanied by apprehension, fear, and obvious concern for self preservation.

When an injured athlete centers most, or all, of his attention upon the injured part he automatically is in a state of hypnosis, or medically speaking, mild shock. This condition is analogous to the depth of medical hypnosis where suggestion is effective upon the sub-conscious mind. In other words, everything that the injured athlete hears or experiences, is recorded and stamped in his sub-conscious mind. Remember that the injured person has already begun to experience pain and fear and if the student trainer, or you as the trainer, expresses doubt or too much concern over the injury, the athlete is even more afraid and doubtful of his eventual recovery. If on the other hand you give this person a positive assurance that his recovery will be rapid and uneventful, it will have much the same effect as a post-hypnotic suggestion as used in medical hypnosis therapy.

There is a very simple, effective and completely safe method that each of you as trainers can use to take advantage of the injured students physical and emotional state. I assure you it will be effective and save you many hours and days in recovery time. This procedure is especially helpful in brain concussions which are so common in football and other bodily contact activities. Briefly the following method may be used.

1. Remove as much apprehension and fear as possible as soon as possible. Fear produces an excessive amount of epinephrine to be released in the body, which constricts the arterioles and capillaries. This in turn reduces the blood supply to the injured part and delays healing. In a calm and gentle manner, ask the injured athlete to lie down and have him take three or four deep breaths. During this period suggest to him that he will begin to relax every muscle in his body and at the same time give him assurance that his physical condition is good and that everything is going to be all right.

Continued on page 8

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FungOspray is a germicidal-fungicidal spray prepared expressly for the treatment of athlete's foot, jock strap itch and other fungus infections. Spray infected areas twice daily. Allow to dry without wiping, and dust with Cramer's Foot and Body Powder. For jock strap itch, have supporter worn over shorts.

Tuf-Skin Spray-ideal for quickly and efficiently spreading a uniform film of Tuf-Skin on areas to be taped. It helps to toughen the skin, protects against tape rash. There is no mess on taper's hands.

Learn the fine art of applying a light, even film and you become an expert.

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Sprahalant, a pure menthol-benzoin spray is your finest aid in the battle against nasal congestion. Spray in the bedroom at night, or the half-time room between halves. Helps clear the head, promotes easier breathing. When sprayed on Kleenex or handkerchief, the menthol vapors last for hours.

Q-D-A Spray is a clear, colorless, quick-drying adhesive. It is used to spray on hard-to-hold moveable areas such as shoulders, hips and knees, before applying tape. Also use to prevent slipping of elastic bandages that are applied over Cramergesic or Atomic packs. Debris easily removed with Tape Remover.

Shine and dress-up your football shoes in 30 seconds with Cramer's Shoe Shine Spray. It is neutral in color, works equally well on tan, brown and black street shoes. Just wipe off dust, then spray, holding can 15 to 18 inches away from shoe. The spray contains silicone for waterproofing.

Amspray is smelling salts in its most economical and practical form. Spray on corner of towel or handkerchief and inhale fumes with caution. It is actually 16 times more economical than our ammonia capsules, and just as effective. It costs about ½ cent each time used, compared to 8¢ for Am-Caps.

Gym-Fresh-Ner is a completely new, extremely effective deodorant spray. Not just a masking perfume, but a deodorant that actually combines with most offensive odors–knocks them out completely. Use in lockers, rest-rooms and training room.

MEDICAL HYPNOSIS (Cont.)

2. Change his thoughts from his injury to something pleasant and peaceful. Most of us can recall someplace that we remember as being peaceful, such as a lake, in the mountains, by the seashore, etc. Have the student keep thinking and remembering and seeing in his mind's eye, some place or something other than his injury. If he has a girl friend, this is always a quick method of thought substitute, but not always restful. While he is thinking of something else suggest to him that the pain or discomfort will begin to improve. Do NOT suggest that the pain will disappear entirely, as this could possibly mask a hidden severe injury.

As the pain subsides, the blood supply improves and tissue repair begins. This is actually just common horse-sense therapy, and as all of you know, when we are not aware of pain it is not nearly as bad. You are only shifting his awareness of pain to something pleasant and peaceful. You need not fear putting the injured athlete into a deep hypnotic trance because you have not suggested anything except something pleasant and a gradual reduction of pain. Your constant assurances will remove the fear. Why do children go to their parents when they are in pain or afraid? To receive love and assurance. You, then, are giving the injured student a basic need at a most critical and important time. Usually by the time the injury is seen by the physician, the student is out of the shock state, and his conscious mind can block off our words of assurance. This, then, is why you as trainers, are placed in the position of really helping to begin injury repair. The students respect you, and what you say and do initially is readily accepted.

The use of hypnosis is not limited to injuries, as evidenced by the fact that hypnosis is being used in athletics world-wide. Take the case of the typical athlete that is excessively tense and nervous prior to competition. It is my personal opinion that some stimulation or excitement is a healthy process, but an excessive amount is really detrimental to full and complete performance. Remember that any type of tension, or fear, releases epinephrine which in turn burns up all available blood sugar. Obviously, then, an excess of this chemical will cause a hypoglycemia (low blood sugar) which reduces the calories needed for physical effort and thought. Medical hypnosis will quickly eliminate this condition and further and deeper suggestion can and does increase total performance by 25-30%. This has been proven in many cases and is a well known fact by any physician qualified to use hypnosis. I do not suggest to the athlete that he perform beyond his capabilities or physical condition. It is only our conscious minds that prevent us from using all of our potential reserves. In other words fear, or not having enough faith in ourselves, to accomplish something. Hypnosis brings out the most in a student and, unlike the so-called "pep pills," is completely safe and healthy. We only bring out what is already present in the students and give them confidence to use their total selves. It is much easier to have self confidence if we have performed at sometime to the best of our ability.

Medical hypnosis is also used to help the students learn to study, which gives them more time to devote to sports and other activities. You will be surprised how some of "those big dumb athletes" can very quickly become excellent students. It also enables them to remember plays and to use their sub-conscious minds to their advantage.

I have only mentioned a few uses of hypnosis as applied to sports and athletics, but from this it is my sincere desire that you trainers begin to see how even more important you can be in helping build both body and character of the students under your care. Removing fear and apprehension and substituting positive thoughts of confidence is one of the most important factors in both therapy and training. Respect hypnosis, but do not fear it and you can be a tremendous help to the coaches, physicians, and athletes and yourselves.

INDICATIONS FOR THERAPEUTIC MODALITIES

R. D. BURK, M.D.
Medical Director Rehabilitation Center
Ohio State University
Columbus, Ohio

The use of physical agents for the treatment of disease is the oldest form of medical therapy. No other therapeutic techniques or agents have stood the test of time for so long a period or as well. In the present day, with our rapid and extensive advance in all branches of medical therapeutics, we still find the physical agents to be among the most commonly prescribed. Next to dietary orders, prescription of some form of exercise is probably the most universal order, and from a patient standpoint, direct heat or heat producing agents are looked upon as the infallible pain relievers.

Generically speaking, the physiatrist thinks of six physical agents, these are: Exercise, Heat, Light, Water, Electricity, and Sound-waves. Despite the universal acceptance of the therapeutic value of these agents, they are often prescribed in a manner that would indicate a lack of understanding of their physiological effects. Let us briefly review the physiological effects of some of these agents and on this basis relate them to medical prescription.

EXERCISE

Exercise is basically accomplished in two ways: Active, requiring conscious voluntary muscular contraction, and Passive, in which muscle contraction is eliminated. The physiological effects of these two forms of exercise is quite different. Active exercise implies an intact motor nervous system and intact contractile soft issue capable of responding to nerve impulse. It also demands pulmonary, vascular, and elimination systems, capable of responding to increased demands upon them, metabolism may be increased and the temperature may be elevated.

Passive exercise, on the other hand, places very little demand, if any, upon the pulmonary, vascular, and elimination systems. It requires neither an intact motor nervous system nor an intact soft tissue contractile mechanism. Neither metabolism nor body temperature is increased. There are physiologic effects common to both active and passive exercise; for example, they both stimulate the proprioceptive portion of the sensory nervous system, and both can provide joint motion. In addition, the physical principles involved apply regardless of the nature of the activating force. It is not within the scope of this paper to elaborate on the mechanical analogies of the human musculo-skeletal system. Suffice to say, we recognize three orders of levers in the body. The most prevalent is that referred to as the third order

Continued on page 9

INDICATIONS FOR THERAPEUTIC (Cont.)

of levers in which the power is applied between the weight and the fulcrum. Most of the lever systems in the human body are arranged so that the distance between the fulcrum and the point of application of power is short, hence, little mechanical advantage is achieved and the force must be powerful to produce motion.

What are the lessons learned from the application of the physical principle governing the action of levers? First, in the lever arrangement most common in the body, a small amount of muscle shortening will produce relatively great amount of movement; and second, muscles which are weak, work at a disadvantage because of their short leverage. If we bear in mind these simple physical principles we will not err by prescribing a type of exercise that will further weaken a muscle group recovering from trauma or prolonged immobilization. Active exercise must be prescribed, then, in a manner that takes into consideration the state of health of the muscle and the end result desired in addition to consideration for the adequacy of the associated body systems to respond to such exercise. The physiatrist subdivides active exercise in accord with the principles just mentioned and the clinical result desired. The type and degree of response to exercise is dependent upon the amount of resistance offered to contraction and the number of contractions. For example, a muscle forced to contract against a maximal load only a few times will respond by an increased size and strength; while contraction against a light load many times will produce very little power or size increase but improve endurance and coordination. Hence the terms, Active-assistive, Active-resistive, and Progressive-resistive exercises have sound physiologic basis as well as practical clinical application.

Fundamentally, therapeutic exercise is seen to have four main objectives. These are:

1. **To Restore or Maintain Joint Motion**

Active exercise can be prescribed for this objective providing the muscles that will do the work are sufficiently strong to overcome the resistance offered by the structures limiting joint motion, and providing the other systems involved are capable of responding to the increased demand of them required by active forceful contraction of muscle. If the muscles are weak then passive exercise is indicated.

2. **To Improve Muscle Strength**

In the instance where improved muscle strength is the clinical objective, we must be concerned with only the active form of exercise, and more specifically contraction against maximal resistance. A weakened muscle may have to be assisted until it is strong enough to move the weight of the part unassisted; in this instance, a second physical agent, water, becomes a valuable adjunct to the exercise modality. Immersion in water will provide support of the part by virtue of the natural buoyancy effect of water plus the resistance it offers to movement. Later the exercise can be graded with progressively increased resistance to keep the muscle working at its maximum.

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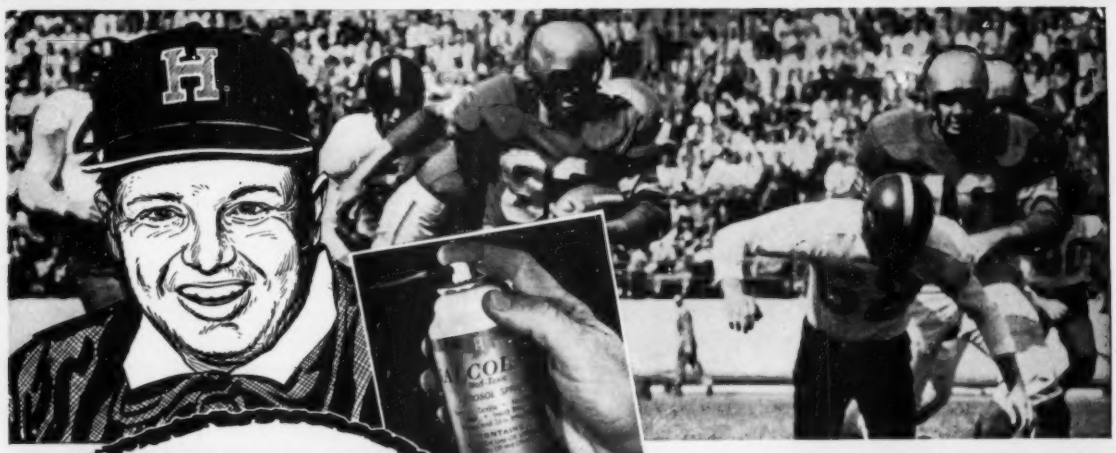

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INDICATIONS FOR THERAPEUTIC (Cont.)

3. To Improve Endurance

Endurance is increased by repetition to a point of moderate fatigue with a progressive extension of the elapsed period before fatigue sets in. Again, the exercise must be active in type but maximal resistance can be avoided. Tolerance to circulatory stress is necessary for improved endurance.

4. To Develop Skill and Coordination

Again, the type of exercise must be active and repetitious with emphasis upon group muscle action. Exercise to increase skill pre-supposes at least fair muscle strength and close to normal joint motion and, therefore, could not be prescribed in situations where serious weakness or joint contractures have not first been overcome through the techniques described in the exercise objectives mentioned above.

Let us bring the principles just discussed to practical application by projecting their use in a common post trauma situation; namely, that of the dislocated shoulder.

Reviewing the musculo-skeletal status we recall that, because of the shallow socket in the glenoid fossa, the shoulder joint is not a strong joint. Its stability depends almost entirely upon the surrounding structures: the long heads of the biceps and triceps, the coracobrachialis, the scapulo-humeral muscles including the teres major and minor, the deltoid, the supra and infra spinatus, and the thoracic-humeral groups – the latissimus dorsi and the pectoralis major.

We must also remember that the major nerves and vessels supplying the arm and hand pass through the axillary space.

Shoulder dislocation often produces a temporary (at least) loss of much of this muscular support and the obvious result is a relatively unstable joint. Nerve contusion may extend the instability into the forearm and hand. Inability to use the arm can then produce secondary disabilities unless we take steps to prevent them.

It is in this post traumatic convalescent period, that exercise (along with other physical agents) becomes an invaluable therapeutic modality. Early after injury the emphasis is, of course, on healing, but this does not dictate against exercise. Passive joint motion even through a limited range will maintain movement and prevent a frozen shoulder. Active exercise in the form of muscle-setting will sustain muscle bulk and strength plus serving to hasten the development of new vascular channels and thereby helping to prevent the prolonged edema so frequently seen in the post traumatic period. The athlete can be taught active-assistive and passive joint range of motion exercises that will prevent restricted motion from producing contracted scar tissue. As healing progresses, lost strength can be regained by progressive resistive exercises.

To summarize, if we bear in mind the physiologic effects of the different forms of exercise and the anatomical status of the injured part, therapeutic exercise in a planned program, that alters in emphasis as muscle joint status changes, will be of great benefit from shortly after injury to full restoration.

HEAT

A second physical agent that lends itself well to the trainer's use is heat. The great variety of techniques and equipment for producing therapeutic heat plus its wide acceptance by the layman cause it to be prescribed almost as frequently as exercise. All physicians see patients who feel their treatment is not complete until they have received some form of heat whether it be a hot bath, hot foments, hotpacks, or a hot-toddy. In physical medicine we have become accustomed to using heat as an adjunct to the treatment of a great number of pathologic conditions. Oddly enough, this widespread applicability has produced on the part of some physicians, a suspicion as to any real therapeutic value of heat. Again it should be remembered that heat, like any other therapeutic agent, chemical drug, parenteral fluids, or mechanical manipulation, can only have real value when accurately prescribed in keeping with its physiologic effects on normal or pathologic tissue.

To briefly review, we know the body utilizes many of its systems in an integrated manner to provide a remarkably stable regulation of body temperature. Chief among these regulation mechanisms is the ability of the skin to act as a radiator and the ability of the arterial circulation to alter its flow to a given surface area. In effect, the body is constantly dealing with thermal gradients utilizing these two mechanisms to either conserve or dissipate heat. It is known, however, that a sufficiently steep thermal gradient, regardless of its direction and independent of the quality or time relations of accompanying temperature sensations, may elicit or increase pain due to other causes. Also, a thermal gradient, in itself painless in normal tissue, may in the presence of injured tissue result in a summation phenomena and give rise to severe pain. Temperature changes which affect deep and superficial tissues equally do not appear to affect the pain mechanism. Therefore, heating or cooling which equalizes differences in the temperature between the deep and superficial tissues can be very effective for the relief of pain.

If we recognize these few principles, heat can be used in manner that will produce the desired results and equally important prevent the development of undesirable results.

For example, hot packs, when applied properly can decrease the temperature gradient between deep muscle, sub-cutaneous tissues and the surface. The skin temperature will show a significant rise followed by a gradual decrease remaining above control value for up to ninety minutes. However, if increased blood flow is desired, we know that repeated packings will produce a greater rise in blood flow than one single pack.

Similarly, controlled studies have shown with microwave diathermy radiation a greater amount of energy is absorbed by the muscle than by the skin or the subcutaneous tissues. Also, twenty minutes of such radiation is often more effective than thirty minutes (the commonly prescribed period of heat application), since in thirty minutes the circulation is sufficiently increased to remove heat from the tissues faster than it can be accumulated. This is in distinction to short wave diathermy where the peak temperatures is **not** reached in twenty minutes but closer to thirty minutes. By comparison the ratio of increase of temperature in deep muscle to sub-cutaneous tissue is greater with microwave diathermy radiation than with short wave diathermy. Of utmost importance is the knowledge that twenty minutes of microwave radiation will produce significantly higher temperatures in an ischemic extremity than in one with intact circulation. Therefore, heat of a duration and intensity that would place a marked demand on ischemic tissues for increased blood supply would be contraindicated. In addi-

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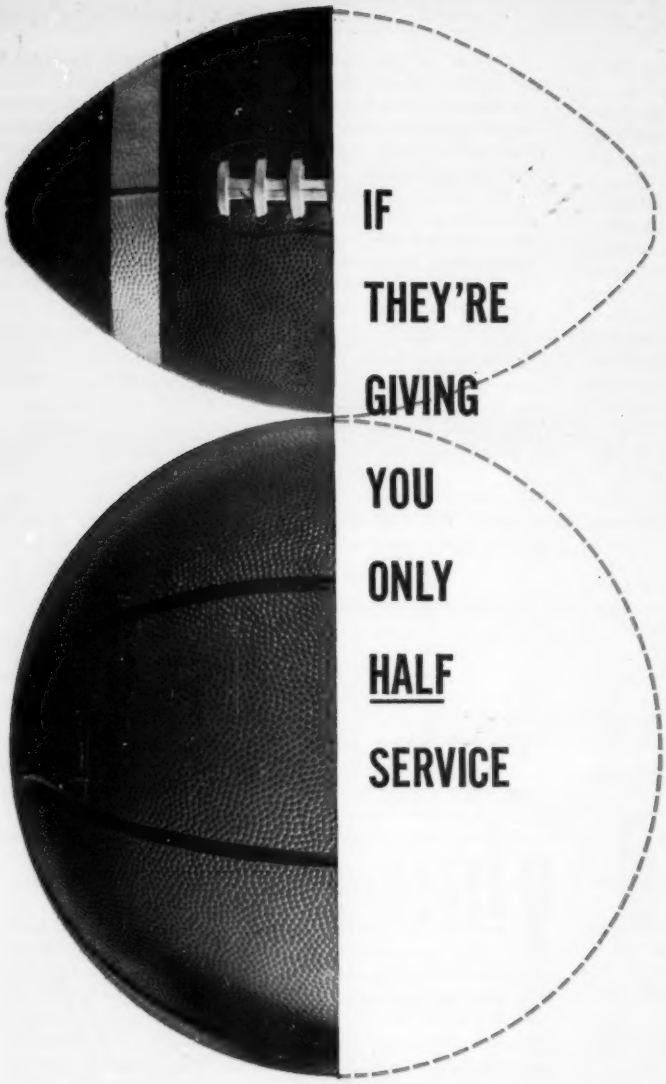

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INDICATIONS FOR THERAPEUTIC (Cont.)

tion, there is the danger of seriously burning the ischemic tissues even though the type, duration, and intensity of heat used may be well within the safe limits for normal tissue.

The sources of therapeutic heat are numerous and most are forms of radiant energy. For reasons of brevity only the most common sources are considered. All heated bodies emit far infra red rays and the low temperature therapeutic heating sources usually emit only these rays —i.e., hot water bottles, electric heating pads, hydrocollator packs, hot packs, etc. The penetration is superficial being absorbed almost entirely in the avascular layers of the skin. The physiologic effects of these sources are the suppression of painful nerve stimuli over superficial sensory nerve endings and a slight reflex circulatory effect. Incandescent bodies emit rays in the so-called near infra red region and have penetratability of 5-10 mm and can, therefore, directly influence the subcutaneous structures such as blood vessels, nerve endings and sweat glands. The commercial infra red radiators and heat lamps are in this category. The major physiologic effect is circulatory both direct and reflexly and use of this type of heating apparatus portends a pre-knowledge of the patient's cardiovascular status.

Electromagnetic waves of very high frequencies are a commonly employed source of therapeutic heat. The general reference term is short-wave diathermy and the heat is produced in the body by electrical inductance and capacitance. Since the end of World War II, and the experience with radar, generators of electro-magnetic energy of extremely high frequencies have been available to medicine and have become known as micro-wave generators. There are three significant comparisons between micro and short-wave heating; peak temperatures are reached more quickly with micro-wave than with short-wave; deep tissues show a rapid sharp rise in temperature when radiated with microwave; and the ratio of increase of temperature in deep muscle to subcutaneous is greater with microwave radiation.

From the foregoing discussion, it should be apparent that heat cannot be prescribed indiscriminantly. Any therapeutic agent that has such a profound and variable effect upon so many different body systems must be wisely applied if benefit rather than harm is our goal. The numerous readily available sources of heat plus the pronounced physiologic benefit to be gained give wide clinical applicability but only if we are discriminating and selective in relating the source of heat to the effects desired.

USE OF COLD

There are two main indications for the use of cold; constriction of vessels, and reduction of painful stimuli. Extensive investigation has been done in an effort to relate the physiologic effects of cold application to clinical indications and use. The Department of Physical Medicine and Rehabilitation at Ohio State University has been involved in these investigations, and we have been quite interested and surprised with some of our results. For example, cooling a nerve produces a regular order of paralysis of curaneous sensation. However, no sensory change or loss occurred at temperatures above 15° C. At 10° C no pain could be elicited. Rapid cooling produced pain which could be prevented by slow induction. Cooling also produced a reduction in the speed of movement of a joint.

One of our conclusions was that significant diminution in painful sensations arising in deep structures cannot be obtained with ordinary cooling techniques. With respect to the vessel constriction we were unable to demonstrate that induced hypothermia results in a decreased blood flow to the cooled region.

The results of this study does not imply the discontinuance of cold applications to a fresh contusion or sprain since our work was not inclusive enough to warrant such a decision. However, it does cast some doubt on the reasoning behind our clinical use of cold.

USE OF WATER

Most of the physiologic effects we ascribe to water are in reality due to the temperature of the water rather than to any specific physical property of water itself. There are two important exceptions to this. One is the buoyancy effect of water and the other is its cleansing properties.

Since our athletes are fine upstanding clean living young men, we can assume they are physically clean also and eliminate this property of water from this morning's discussion (I'm referring to the athletes in the Big Ten, of course.) We use the buoyancy property of water a great deal in Phys. Med. to support or provide a medium for movement of weak muscles; but again the trainer will have little need for this property of water.

You do, however, have many occasions to use water as a method of heat transmission and you should therefore be familiar with some of the restrictions to its clinical applications.

In this regard it is of fundamental importance to understand this body's perception of temperature in water.

A too hot or too cold bath stimulates the sympathetics with vaso constriction while the warm bath produces parasympathetic stimulation.

Considerable emphasis has been placed upon the efficacy of agitating water baths implying some magical ingredient is added by putting the water in motion. Claims are made that circulation and heating effectiveness are increased in the whirlpool bath over the straight tub bath. Clinical substantiation of these claims is somewhat lacking. Studies using the venous occlusion plethysmograph to measure increased blood volume have shown agitation to have little, if any, effect on circulatory increase, while the same extremity in the same bath at the same temperature showed a mild circulatory increase lasting approximately 45 minutes when the agitator was not used. (Ref.)

On the other hand, using the same subjects, the temperature of the bath had a profound effect on circulation. A bath of 38.6° C. for 30 minutes produced 21% increase in blood flow, and if the temperature was raised to 42° C. a 50% increase was noted.

As for the use of water baths to stimulate circulation, the contrast bath is by far the most effective for an extremity. It should be explained that to the physician specializing in Physical Medicine, the term contrast bath refers to a very specific modality. The best vascular response is obtained by always starting and ending with a hot bath and reversing the baths in a definite time ratio —for example, hot bath, 6 minutes—cold, 4 minutes; or 10 minutes hot, 1 minute cold, 4 minutes hot, 1 minute cold, and continue for 7-9 reversals or approximately 30 minutes total time. A significant increase in blood flow is shown that lasts approximately 45 minutes.

A simple clinical point here warrants mention. Baths are frequently used for acute sprains, strains, and contusions when considerable edema is present in the injured tissues.

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INDICATIONS FOR THERAPEUTIC (Cont.)

Frequently the injured area is placed in a dependent position in the tub bath, thereby adding to the edema. This can easily be counteracted by having the patient elevate the extremity for 30 seconds frequently during the bath.

In summary, I have discussed some of the physical agents available to you as trainers. I have attempted to relate use of these agents directly to their physiologic effects and the clinical result desired. When this is done with a pre-knowledge of the precise effect of the particular agent being used, the results will be most gratifying regardless of the setting, be it hospital, trainer's room, or home.

SANITATION IN PHYSICAL EDUCATION AND ATHLETICS

By MICHAEL F. WILSON
Purdue University

I have chosen four sites around which I will base my discussion: **Locker, Shower, Drying,** and **Training Rooms.**

LOCKER ROOM

Experts say that the locker room should include 14 square feet per individual at peak load. Naturally every student should have his own locker and not share with someone else. Basket lockers are looked upon with disfavor because the clothes do not have an opportunity to air and an attendant is needed for good administration. Each student should wash all of his gym clothes at least once per week.

SHOWER ROOM

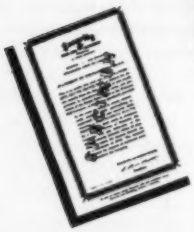
There should be one shower per four boys, and the shower heads should be four feet apart. The shower should be equipped with liquid soap dispensers, and good ventilation and heating should be included. The room should be disinfected often to keep down athlete's foot. Students should be told not to urinate in the shower rooms, and strict supervision should be given to see that such practices do not occur.

DRYING ROOM

This should be equipped with proper drainage, proper heating and ventilation, and a towel bar. This keeps students from tracking water through the locker room.

TRAINING ROOM

The trainer should wash his hands before working on any patients. Ample dispensaries should be located to deposit tape, etc. Skin diseases should be treated immediately and extreme caution should be taken not to spread the disease. Example: No athlete's foot in whirlpool; don't re-use towels.



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A TALK GIVEN AT THE NATIONAL CONVENTION

By ERNEST B. McCOY
Director of Athletics, The Pennsylvania State University, and Chairman of the N.C.A.A. Committee on "Injuries and Safety"

Mr. Chairman and Gentlemen: I am very complimented on being invited to meet with you this morning. In my book, you men hold one of the most important positions in athletics today. In all probability you will not accumulate great financial wealth in this field, but the experience of working with "Young America," the athletes of your institution, is something money can't buy. Your contribution to the success of these young men is also something men never forget.

Things are happening in athletics today and we, the administrators and coaches, are going to need your help to find some answers.

Every time I pick up a newspaper nowadays, I find that somebody is doing something better than it has ever been done before.

The sport doesn't much matter because as recently as a few weeks ago, a pitcher by the name of Harvey Haddix demonstrated that a nine-inning no-hit baseball game no longer will necessarily stop the presses.

There was a time recently when every time a couple of milers got together, they ran the distance under four minutes.

Where is it all going to stop?

Even the medicos are getting into the act . . . fearful that over-ambitious coaches have swung over to pep pills to help their proteges do these unbelievable things.

Just the other night, I heard a testimonial on television which made me wonder how far these things can go.

It was an unsolicited testimonial . . . and it came from an over-eager contestant on a local quiz program.

"Since I've been taking your pills," the rather pretty matron said, "I'm another woman—and is my husband delighted!"

I have often wondered about the evolution of the position of the trainer in athletics. When, where, and how did it start.

Webster's Collegiate Dictionary defines "trainer," the noun, as "One who trains, especially, one who trains men, horses, etc., for exercises requiring agility and strength."

Consequently, I would assume that early, the coach was also the trainer. From my very limited research, I find that the track coach, or the boxing coach, or the wrestling coach, because of experience with conditioning for athletic contests, were called upon especially by football coaches, to take charge of conditioning of the athletes. I would therefore also assume that it was only natural for this same individual to gradually become responsible for the treatment of injuries such as sprains, lacerations, bruises, etc.

As the intercollegiate athletic picture expanded, with more and more participants and more sports added to the program, the job of athletic trainer became more important and more demanding in experience, and the job needed full time status. The position moved from conditioning to early wrapping and massage to its present day status of **specialist.**

It is my personal conviction that jobs or positions which are built on need and performance are better because of this experience. So with the athletic trainer, who today holds a position of real importance and respectability in the field of intercollegiate athletics.

That is how I feel about the trainer in our set-up. I think he has one of the most important jobs on my staff.

Let's look at what we expect of him:

His first job, as I see it, is threefold: (1) He is responsible for preventive measures, conditioning, etc., (2) for treatment of injuries, and (3) for rehabilitation. This last is a relatively new function—but a very important one—and trainers are doing an excellent job of it.

The special skills which a trainer possesses today qualify him to do unbelievable jobs . . . and make him invaluable to the athlete, to the coach, to the athletic director. . . . Yes, to the university itself. The fate of intercollegiate athletics would be in serious jeopardy if we were not able at every turn to demonstrate that the participants are receiving every possible attention from the university for which they compete, so the care and attention of training department is very important!

In the old days, if I may refer ... . facetiously, of course . . . to my own playing days of 30 years ago, a trainer was not expected to do much more than "tone up" your muscles, cover cuts and scratches with adhesive tape, wrap ankles and stop nose bleeds. Today, the trainer is a scientist. . . . Yes, and even an artist, in his own right.

I find it a thing of beauty to watch a trainer at work in the training room today. The care, diagnosis and attention he gives to bruised muscles . . . his use of diathermy . . . his use of the whirlpool. . . . Yes, and the artistry of taping . . . are lovely to behold.

The trainer is a true artisan. Methods differ from sport to sport . . . nutritious dieting is absolutely essential in a sport like wrestling . . . scientific conditioning is imperative in all sports . . . and no trainer can hope to succeed if he does not keep abreast of developments and do everything possible to improve his techniques from year to year.

It perturbs me, however, to think that with all of our wonderful facilities for athletic training that we still have so many problems . . . to take only one . . . success in the Olympic games.

What is the answer to the ability of the Russians to lick us in so many sports and of the Australians to take over in sports like swimming, tennis and the mile run.

Do these countries—the one free, the other Communistic—both regiment their athletes?

Is their climate better than ours?

Is professionalism the approach?

Or, do they have training secrets that we don't possess?

Whatever it is, I wish devoutly that we would come up with the answer, because nobody, and that means both you and me, wants to play second fiddle to Russia in the athletic arena when we know that our potential is every bit as good, and our opportunities better to produce the top athletes in the universe.

For the past three years, we at Penn State have been carrying on some research relating to conditioning—endurance and reconditioning. This has had some interesting conclusions. Naturally, the data is not all conclusive because of the necessarily limited size of the group tested. However, there is some food for thought—for instance: in investigating endurance, it was found

(1) That endurance is a most variable factor in individuals—it is extremely hard to predict what a specific training will do for any one person.

In five weeks of endurance bicycle work—three times a week—we got a range of improvement from 31 percent to 520 percent.

Continued on page 15

A TALK (Continued)

(2) That once a high level of endurance is built, one "all-out" bout of exercise per week will maintain this high level for most people.

(3) Exercise, even as infrequently as every other week (all-out, very rigorous) will preserve a great deal of one's endurance for a long time, once it has been developed.

(4) All-out bouts of exercise are reduced in value if they occur too frequently. Recovery to top efficiency is slowed. For training purposes, it was found that "all-out bouts" of exercise twice a week were much better than three or four.

(5) Also, we found that ability to persist in all-out strenuous activity was improved if the subject compensated to some degree for loss of water (through preparation) by intake of three or four swallows of not too cold water.

We also studied the effects of various incentives upon endurance performances.

Ninety-seven college students were trained for six "all-out" endurance performances on a bicycle ergometer with 30 pounds pressure on the flywheel. Following these trials, the subjects were equated into four groups by means of the standard deviation. Each group was then motivated by **one** of the following incentives: an audience, a money reward, and a set goal (watching a clock and trying to beat their own record). No motivation was applied during the preliminary trials. There was also a control group with no incentive.

Results:

(1) Watch the clock and reach a set goal:
Mean of 6 trials.....105.9 seconds
Mean of final trial.....146.2 seconds (with incentive)
Difference of means.... 40.3 seconds (increase)

(2) Audience incentive (4 females, 23 males)
Mean of 6 trials.....112.3 seconds
Mean of final trial.....147.4 seconds (with incentive)
Difference of means.... 35.1 seconds (increase)

(3) Money reward ($1.00 for each 20 seconds improvement)
Mean of 6 trials.....106.6 seconds
Mean of final trial.....139.3 seconds (with incentive)
Difference of means.... 32.7 seconds (increase)

It appears that the **set goal incentive** produced the greatest average increase of endurance, approaching more closely the physiological limit of the subject. The **audience** incentive was "second best," while the **money reward** incentive affected the subjects the least. The control group (Group 4) improved only one second on final test.

These findings are simply an indication to us at Penn State that it is impossible to make group prescriptions relative to maintenance of endurance without handicapping some members of the group being trained.

Gentlemen, perhaps it may be possible through experimentation and research to find a partial substitute for the regimented and professional approach of the Russians for success in athletic achievement. We must find a way! And we need your help to find the answer.

Many of you participated in a questionnaire circulated by the N.C.A.A. Committee on "injuries and safety," of which I happen to be chairman. May I say to you that I know I speak for the Committee when I say "thanks" to each of you who helped us.

I have the results of the study with me, and will read a few to you. However, the results and conclusions in their entirety will be distributed to each of you who helped us. This material we hope to have in your hands by the end of August.

Now as an administrator and certainly not as a specialist in your field I would ask your help in one other important matter. Interscholastic intercollegiate wrestling today is on very dangerous ground—because of the increasing practice of weight making and shifting weight classes from match to match.

Wrestling is one of our oldest and finest athletic sports. Its popularity is unquestioned, but new rules must be written or the activity will lose a great deal of the support it now has. Just this past season I have had letters of criticism from our university president, an ardent fan, and many others who are presently loyal to wrestling. They simply are fearful of the health hazards involved in the indiscriminate shifting of boys from weight class to weight class, week to week.

A parent on my own staff, with two youngsters in high school, almost had a blow up in the family this winter because of the spartan diet these two boys had to stay under the limit in the class in which they wrestled.

If you agree with me that this is a real problem—will you use the voice that you have as a national organization, and it could be a loud one if you would have it so, and come up with some type of formal resolution covering this problem. I am sure the rules makers and coaches will listen.

Now **may I offer a few words of caution**—Your very position thrusts you into a sensitive spot where you become the confidante of the athlete . . . where you are required to listen daily to all kinds of "beefs" . . . and where, if you yield to the temptation, you can do your

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A TALK (Continued)

coach and employer great disservice. What I am trying to say, I suppose, is that a trainer must of necessity be a good listener . . . and must beware not to contribute to a coach's difficulties by encouraging teen-aged athletes to revel against authority . . . whether the authority be the coach, the teacher in the classroom, the team captain . . . or the university.

In other words, your position carries a grave responsibility in maintaining morale and, if you misuse this influence, you will not be entitled to the consideration you now command.

My second point . . . and perhaps it is more important than the first, is this: Where the team physician is a part of the organization, the trainer must yield at all times to medical opinion. Trainers of long experience become very knowledgeable . . . and I'm quite frank to admit that they have relatively little difficulty in winning the confidence of the people they serve. But not matter how enticing the temptation, please don't attempt to do the doctor's job. The university does not expect it of you . . . on the contrary, they place full responsibility for the athlete's welfare in the doctor's hands . . . and it is for him to make medical decisions. The trainer does what he knows best to do, and by so doing does not enhance the legality of his position.

Gentlemen, I have taken up a great deal of your very valuable time, but I do want you to know that I appreciate the opportunity to be here with you—and offer my very hearty congratulations on so often an unsung job being so well done by your whole profession.

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